10. The method of Claim 9 wherein the group is an empty group.

11. The method of Claim 9 wherein the group is a dynamic topology group (DTG).

12. The method of Claim 9 wherein the step of configuring a DNS server further comprises transmitting the group ID resource record to the DNS server in accordance with DNS Update protocol.

13. The method of Claim 9 further comprising deleting the group ID resource record that defines the group, thereby deleting the group.

14. The method of Claim 9 further comprising the step of transmitting a message in accordance with DNS Update protocol to delete the group ID resource record that defines the group, thereby deleting the group.

15. The method of Claim 9 further comprising the step of adding, in accordance with DNS Update protocol, a group info resource record to associate an additional DNS resource record with the group, thereby adding the respective DNS resource record to the group.

16. The method of Claim 9 further comprising deleting, in accordance with DNS Update protocol, group info resource records that associate a DNS resource record with the group, thereby removing the respective DNS resource record from the group.

17. The method of Claim 9 further comprising deleting a group info resource record that associates a DNS resource record with the group, thereby removing the respective DNS resource record from the group.

18. The method of Claim 9 further comprising modifying one or more group info resource records.

19. The method of Claim 9 wherein at least one group info resource record defines how a DNS server is to respond to queries for its respective DNS resource record when the group is inactive.

20. The method of Claim 9 wherein at least one group info resource record specifies that a DNS server responds to a DNS query for a DNS resource record in an inactive group exactly as if the DNS resource record did not exist.

21. The method of Claim 9 wherein at least one group info resource record specifies that a DNS server responds to a DNS query for a DNS resource record in an inactive group with zero answers with at least one of a TXT resource record and return to service time (RTST) resource record in the additional information section of a DNS response.

22. The method of Claim 9 wherein at least one group info resource record specifies that a DNS server responds to a DNS query for a MX resource record in an inactive group with a zero answers so that the next highest priority MX resource record will be queried as a result.

23. The method of Claim 9 wherein at least one group info resource record specifies that a DNS server responds to a DNS query for a DNS resource record in an inactive group with a configurable substitute resource record.

24. The method of Claim 9 wherein at least one group info resource record specifies that a DNS server responds to a DNS query for a DNS resource record in an inactive group with an alternate address (type A) resource record whose address is the address of a server outside the group.

25. The method of Claim 9 wherein at least one group info resource record specifies that a DNS server responds to a DNS query for a DNS resource record in an inactive group with a server failure return code such that client discovers the unavailability of the resource without inferring that the resource does not exist.

26. The method of Claim 9 further comprising the step of a single selected computer generating heartbeat messages in accordance with a heartbeat protocol indicating the availability of one or more computer resources represented by respective DNS resource records, such that loss of heartbeat from the selected computer is indicative that all computer resources are unavailable, and the presence of a heartbeat from the selected machine is indicative that all computer resources are available.

27. The method of Claim 9 further comprising the step of a single selected computer generating heartbeat messages in accordance with a heartbeat protocol indicating the availability of one or more computer resources represented by respective DNS resource records, such that loss of heartbeat from the selected computer is indicative

5   that all computer resources are unavailable, and the presence of a heartbeat from the

6   selected machine is indicative that all computer resources are available; and the step of

7   the single selected computer requesting a new heartbeat rate, and upon agreement by the

8   DNS server to the new heartbeat, implementing the new heartbeat.

1   28.   The method of Claim 9 further comprising the step of a single selected

2   computer generating heartbeat messages in accordance with a heartbeat protocol

3   indicating the availability of one or more computer resources represented by respective

4   DNS resource records, such that loss of heartbeat from the selected computer is indicative

5   that all computer resources are unavailable, and the presence of a heartbeat from the

6   selected machine is indicative that all computer resources are available; and the step of

7   the DNS server imposing at any time a minimum heartbeat period on the selected

8   computer.

1   29.   The method of Claim 9 further comprising the step of a single selected

2   computer generating heartbeat messages in accordance with a heartbeat protocol

3   indicating the availability of one or more computer resources represented by respective

4   DNS resource records, such that loss of heartbeat from the selected computer is indicative

5   that all computer resources are unavailable, and the presence of a heartbeat from the

6   selected machine is indicative that all computer resources are available; and generating a

7   message by the selected computer in accordance with the heartbeat protocol to deactivate

8   the group.

1   30.   The method of Claim 9 further comprising the step of a single selected

2   computer generating heartbeat messages in accordance with a heartbeat protocol

3   indicating the availability of one or more computer resources represented by respective

4   DNS resource records, such that loss of heartbeat from the selected computer is indicative

5   that all computer resources are unavailable, and the presence of a heartbeat from the

6   selected machine is indicative that all computer resources are available; generating a

7   message by the selected computer in accordance with the heartbeat protocol to deactivate

8   the group; and generating an acknowledgement message by the DNS server to the

9   selected computer prior to deactivation of the group.

31. The method of Claim 9 further comprising the step of a single selected computer generating heartbeat messages in accordance with a heartbeat protocol indicating the availability of one or more computer resources represented by respective DNS resource records, such that loss of heartbeat from the selected computer is indicative that all computer resources are unavailable, and the presence of a heartbeat from the selected machine is indicative that all computer resources are available; generating a message by the selected computer in accordance with the heartbeat protocol to deactivate the group and indicate a return to service time (RTST); and generating an acknowledgement message by the DNS server to the selected computer prior to deactivation of the group.

32. A method for implementing a heartbeat protocol, comprising generating heartbeat messages by a single selected computer indicating the availability of resources on one or more computers, such that loss of heartbeat from the selected computer is indicative that all computer resources are unavailable, and the presence of a heartbeat from the selected machine is indicative that all computer resources are available.

33. The method of Claim 32 further comprising the step of the single selected computer requesting a new heartbeat rate, and upon agreement by the server to the new heartbeat, implementing the new heartbeat rate.

34. The method of Claim 32 further comprising the step of the server imposing at any time a minimum heartbeat period on the selected computer.

35. The method of Claim 32 further comprising the step of generating a message by the selected computer in accordance with the heartbeat protocol to indicate unavailability of the one or more computer resources.

36. The method of Claim 32 further comprising the step of generating a message by the selected computer in accordance with the heartbeat protocol to indicate unavailability of the one or more computer resources; and generating an acknowledgement of unavailability message by the server to the selected computer.--